In the Claims:

1. (Original) A method for determining a point of loss for data records to be communicated between a source and a destination on a communication network, the method comprising the steps of:

determining a topology of the communication network between the source and the destination, the topology including a plurality of connecting nodes;

monitoring a number of data records from the source directed to the destination passing between ones of the connecting nodes during a determined period of time; and

identifying at least one of the connecting nodes as the point of loss based on the monitored number of data records and the determined topology.

2. (Original) The method of Claim 1 wherein a plurality of network appliances configured to obtain a number of data records passing between a pair of connecting nodes during a time period are positioned between respective ones of the connecting nodes, and wherein the monitoring step further comprises the steps of:

identifying at least one of the network appliances on the topology; and

obtaining the number of data records from the source directed to the destination obtained by the identified at least one network appliance during the determined period of time.

3. (Original) The method of Claim 2 wherein the steps of identifying at least one of the network appliances on the topology and obtaining the number of data records from the source directed to the destination obtained by the identified at least one network appliance during the determined period of time further comprise the steps of:

identifying at least one first hop one of the network appliances which is coupled to the source over the communication network;

identifying at least one next hop one of the network appliances which is coupled between the at least one first hop one of the network appliances and the destination;

obtaining a number of data records from the source directed to the destination obtained by the at least one first hop one of the network appliances and the at least one next

hop one of the network appliances during the determined time period; and

wherein the step of identifying at least one of the connecting nodes as the point of loss further comprises the steps of:

comparing the number of data records from the source directed to the destination obtained by one of the at least one first hop one of the network appliances with the number of data records from the source directed to the destination obtained by ones of the at least one next hop one of the network appliances coupled between the one of the at least one first hop one of the network appliances and the destination; and

identifying a connecting node positioned between the at least one first hop one of the network appliances and the ones of the at least one next hop one of the network appliances as the point of loss for data records if the number of data records from the source directed to the destination obtained by one of the at least one first hop one of the network appliances differs by a threshold amount from the number of data records from the source directed to the destination obtained by ones of the at least one next hop one of the network appliances coupled between the one of the at least one first hop one of the network appliances and the destination.

4. (Original) The method of Claim 3 wherein the at least one first hop one of the network appliances is coupled to the source without intervening ones of the network appliances being coupled between the source and the first hop one of the network appliances and wherein the at least one next hop one of the network appliances is coupled between the at least one first hop one of the network appliances and the destination without intervening ones of the network appliances being coupled between the at least one first hop one of the network appliances and the at least one next hop one of the network appliances.

5. (Original) The method of Claim 3 wherein the step of comparing the number of data records from the source directed to the destination obtained by one of the at least one first hop one of the network appliances with the number of data records from the source directed to the destination obtained by ones of the at least one next hop one of the network appliances coupled between the one of the at least one first hop one of the network appliances

and the destination further comprises the step of comparing a number of data records from the source directed to the destination obtained by an upstream one of the network appliances with a number of data records from the source directed to the destination obtained by at least one downstream one of the network appliances coupled between the upstream one of the network appliances and the destination at an adjacent downstream position for successive ones of the network appliances until at least one of the destination is reached or at least one of the connecting nodes is identified as the point of loss for data records and wherein the step of identifying a connecting node positioned between the at least one first hop one of the network appliances and the ones of the at least one next hop one of the network appliances as the point of loss for data records comprises the step of identifying a connecting node positioned between the upstream one of the network appliances and corresponding downstream ones of the network appliances as the point of loss for data records if the number of data records from the source directed to the destination obtained by the upstream one of the network appliances differs by a threshold amount from the number of data records from the source directed to the destination obtained by the corresponding downstream ones of the network appliances.

6. (Original) The method of Claim 5 wherein the step of comparing a number of data records from the source directed to the destination obtained by an upstream one of the network appliances with a number of data records from the source directed to the destination obtained by at least one downstream one of the network appliances coupled between the upstream one of the network appliances and the destination at an adjacent downstream position is repeated for successive ones of the network appliances on the topology until the destination is reached and wherein the step of identifying at least one of the connecting nodes as the point of loss further comprises the step of identifying all connecting nodes positioned between upstream ones of the network appliances and corresponding downstream ones of the network appliances as points of loss for data records if the number of data records from the source directed to the destination obtained by respective upstream ones of the network appliances differs by a threshold amount from the number of data records from the source directed to the destination obtained by corresponding downstream ones of the network appliances.

7. (Original) The method of Claim 3 further comprising the step of adjusting obtained numbers of data records from the source directed to the destination to compensate for in transit introduced changes to data records before comparing the number of data records from the source directed to the destination obtained by one of the at least one first hop one of the network appliances with the number of data records from the source directed to the destination obtained by ones of the at least one next hop one of the network appliances coupled between the one of the at least one first hop one of the network appliances and the destination.

8. (Original) The method of Claim 7 wherein the step of adjusting obtained numbers of data records comprises the step of adjusting obtained numbers of data records from the source directed to the destination to compensate for encryption related changes in data records introduced by a connecting node coupled between the a first hop one and at least one next hop one of the network appliances.

9. (Original) The method of Claim 3 further comprising the step of defining the determined period of time for the at least one first hop one of the network appliances and the at least next hop one of the network appliances based on a delay between the at least one first hop one of the network appliances and the at least next hop one of the network appliances.

10. (Original) The method of Claim 9 wherein the step of defining the determined time period further comprises the step of defining the determined period of time for the at least one first hop one of the network appliances and the at least next hop one of the network appliances based on an average delay between the at least one first hop one of the network appliances and the at least next hop one of the network appliances determined over an averaging window.

11. (Original) The method of Claim 3 further comprising the step of defining the threshold amount based on an expected timing related variability between numbers of data

records obtained by ones of the network appliances.

12. (Original) The method of Claim 11 wherein the step of defining the threshold amount further comprises the step of defining the threshold amount based on a percentage of data record throughput for respective ones of the network appliances.

13. (Original) The method of Claim 3 wherein the connecting nodes are routing devices selected from the group consisting of routers, bridges and switches.

14. (Original) The method of Claim 3 wherein a network appliance is positioned between each defined connecting node in the topology and all other adjacent defined connecting nodes in the topology.

15. (Original) The method of Claim 14 wherein at least one of the defined connecting nodes comprises a plurality of routing devices.

16. (Original) A system for determining a point of loss for data records to be communicated between a source and a destination on a communication network, the system comprising:

a memory including a topology of the communication network between the source and the destination, the topology including a plurality of connecting nodes;

a receiver that receives from a plurality of network appliances at determined locations on the communication network a number of data records from the source directed to the destination passing between ones of the connecting nodes during a determined period of time; and

a comparison circuit that identifies at least one of the connecting nodes as the point of loss based on the received number of data records, the locations of the network appliances and the topology.

17. (Original) The system of Claim 16 further comprising the plurality of network

appliances wherein pairs of the connecting nodes define segments of the topology between the source and the destination and wherein at least one of the network appliances is coupled between each of the pairs of the connecting nodes.

18. (Original) The system of Claim 17 wherein at least one of the network appliances further comprises:

a timer;

a filter that identifies ones of a plurality of data records detected by the at least one of the network appliances that are being transmitted from the source to the destination on the communications network;

a counter that counts filtered one of the plurality of data records, the counter being configured to be reset responsive to the timer; and

a transmitter that transmits counts from the counter to the receiver.

19. (Original) The system of Claim 17 wherein the filter is configured to identify ones of the plurality of data records based on the source Internet Protocol (IP) address and destination IP address of a data packet containing data records detected by the at least one of the network appliances.

20. (Original) A system for determining a point of loss for data records to be communicated between a source and a destination on a communication network, the system comprising:

means for determining a topology of the communication network between the source and the destination, the topology including a plurality of connecting nodes;

means for monitoring a number of data records from the source directed to the destination passing between ones of the connecting nodes during a determined period of time; and

means for identifying at least one of the connecting nodes as the point of loss based on the monitored number of data records and the determined topology.

21. (Currently Amended) The system of Claim 20 ~~1~~ further comprising:

a plurality of network appliances configured to obtain a number of data records passing between a pair of connecting nodes during a time period, ones of the network appliances being positioned between respective ones of the connecting nodes;

wherein the means for monitoring further comprises:

means for identifying at least one of the network appliances on the topology; and

means for obtaining the number of data records from the source directed to the destination obtained by the identified at least one network appliance during the determined period of time.

22. (Original) The system of Claim 21 wherein the means for identifying at least one of the network appliances on the topology and the means for obtaining the number of data records from the source directed to the destination obtained by the identified at least one network appliance during the determined period of time further comprise:

means for identifying at least one first hop one of the network appliances which is coupled to the source over the communication network;

means for identifying at least one next hop one of the network appliances which is coupled between the at least one first hop one of the network appliances and the destination;

means for obtaining a number of data records from the source directed to the destination obtained by the at least one first hop one of the network appliances and the at least one next hop one of the network appliances during the determined time period; and

wherein the means for identifying at least one of the connecting nodes as the point of loss further comprises:

means for comparing the number of data records from the source directed to the destination obtained by one of the at least one first hop one of the network appliances with the number of data records from the source directed to the destination obtained by ones of the at least one next hop one of the network appliances coupled between the one of the at least one first hop one of the network appliances and the destination; and

means for identifying a connecting node positioned between the at least one first hop one of the network appliances and the ones of the at least one next hop one of the network

appliances as the point of loss for data records if the number of data records from the source directed to the destination obtained by one of the at least one first hop one of the network appliances differs by a threshold amount from the number of data records from the source directed to the destination obtained by ones of the at least one next hop one of the network appliances coupled between the one of the at least one first hop one of the network appliances and the destination.

23. (Original) The system of Claim 22 wherein the at least one first hop one of the network appliances is coupled to the source without intervening ones of the network appliances being coupled between the source and the first hop one of the network appliances and wherein the at least one next hop one of the network appliances is coupled between the at least one first hop one of the network appliances and the destination without intervening ones of the network appliances being coupled between the at least one first hop one of the network appliances and the at least one next hop one of the network appliances.

24. (Original) The system of Claim 22 wherein the means for comparing the number of data records from the source directed to the destination obtained by one of the at least one first hop one of the network appliances with the number of data records from the source directed to the destination obtained by ones of the at least one next hop one of the network appliances coupled between the one of the at least one first hop one of the network appliances and the destination further comprises means for comparing a number of data records from the source directed to the destination obtained by an upstream one of the network appliances with a number of data records from the source directed to the destination obtained by at least one downstream one of the network appliances coupled between the upstream one of the network appliances and the destination at an adjacent downstream position for successive ones of the network appliances until at least one of the destination is reached or at least one of the connecting nodes is identified as the point of loss for data records and wherein the means for identifying a connecting node positioned between the at least one first hop one of the network appliances and the ones of the at least one next hop one of the network appliances as the point of loss for data records comprises means for

identifying a connecting node positioned between the upstream one of the network appliances and corresponding downstream ones of the network appliances as the point of loss for data records if the number of data records from the source directed to the destination obtained by the upstream one of the network appliances differs by a threshold amount from the number of data records from the source directed to the destination obtained by the corresponding downstream ones of the network appliances.

25. (Original) The system of Claim 24 wherein the means for comparing a number of data records from the source directed to the destination obtained by an upstream one of the network appliances with a number of data records from the source directed to the destination obtained by at least one downstream one of the network appliances coupled between the upstream one of the network appliances and the destination at an adjacent downstream position is configured to compare successive ones of the network appliances on the topology until the destination is reached and wherein the means for identifying at least one of the connecting nodes as the point of loss further comprises means for identifying all connecting nodes positioned between upstream ones of the network appliances and corresponding downstream ones of the network appliances as points of loss for data records if the number of data records from the source directed to the destination obtained by respective upstream ones of the network appliances differs by a threshold amount from the number of data records from the source directed to the destination obtained by corresponding downstream ones of the network appliances.

26 (Original) The system of Claim 22 further comprising means for adjusting obtained numbers of data records from the source directed to the destination to compensate for in transit introduced changes to data records before comparing the number of data records from the source directed to the destination obtained by one of the at least one first hop one of the network appliances with the number of data records from the source directed to the destination obtained by ones of the at least one next hop one of the network appliances coupled between the one of the at least one first hop one of the network appliances and the destination.

27. (Original) The system of Claim 26 wherein the means for adjusting obtained numbers of data records comprises means for adjusting obtained numbers of data records from the source directed to the destination to compensate for encryption related changes in data records introduced by a connecting node coupled between the a first hop one and at least one next hop one of the network appliances.

28. (Original) The system of Claim 22 further comprising means for defining the determined period of time for the at least one first hop one of the network appliances and the at least next hop one of the network appliances based on a delay between the at least one first hop one of the network appliances and the at least next hop one of the network appliances.

29. (Original) The system of Claim 28 wherein the means for defining the determined time period further comprises means for defining the determined period of time for the at least one first hop one of the network appliances and the at least next hop one of the network appliances based on an average delay between the at least one first hop one of the network appliances and the at least next hop one of the network appliances determined over an averaging window.

30. (Original) The system of Claim 22 further comprising means for defining the threshold amount based on an expected timing related variability between numbers of data records obtained by ones of the network appliances.

31. (Original) The system of Claim 30 wherein the means for defining the threshold amount further comprises means for defining the threshold amount based on a percentage of data record throughput for respective ones of the network appliances.

32. (Original) The system of Claim 22 wherein the connecting nodes are routing devices selected from the group consisting of routers, bridges and switches.

33. (Original) The system of Claim 22 wherein a network appliance is positioned between each defined connecting node in the topology and all other adjacent defined connecting nodes in the topology.

34. (Original) The system of Claim 33 wherein at least one of the defined connecting nodes comprises a plurality of routing devices.

35. (Original) A computer program product for determining a point of loss for data records to be communicated between a source and a destination on a communication network based on a topology of the communication network between the source and the destination, the topology including a plurality of connecting nodes, the computer program product comprising:

a computer-readable storage medium having computer-readable program code embodied in said medium, said computer-readable program code comprising:

computer-readable program code which monitors a number of data records from the source directed to the destination passing between ones of the connecting nodes during a determined period of time; and

computer-readable program code which identifies at least one of the connecting nodes as the point of loss based on the monitored number of data records and the determined topology.

36. (Original) The computer program product of Claim 35 wherein a plurality of network appliances configured to obtain a number of data records passing between a pair of connecting nodes during a time period are positioned between respective ones of the connecting nodes, wherein the computer-readable program code which monitors further comprises:

computer-readable program code which identifies at least one of the network appliances on the topology; and

computer-readable program code which obtains the number of data records from the source directed to the destination obtained by the identified at least one network appliance

during the determined period of time.

37. (Original) The computer program product of Claim 36 wherein the computer-readable program code which identifies at least one of the network appliances on the topology and the computer-readable program code which obtains the number of data records from the source directed to the destination obtained by the identified at least one network appliance during the determined period of time further comprise:

computer-readable program code which identifies at least one first hop one of the network appliances which is coupled to the source over the communication network;

computer-readable program code which identies at least one next hop one of the network appliances which is coupled between the at least one first hop one of the network appliances and the destination;

computer-readable program code which obtains a number of data records from the source directed to the destination obtained by the at least one first hop one of the network appliances and the at least one next hop one of the network appliances during the determined time period; and

wherein the computer-readable program code which identifies at least one of the connecting nodes as the point of loss further comprises:

computer-readable program code which compares the number of data records from the source directed to the destination obtained by one of the at least one first hop one of the network appliances with the number of data records from the source directed to the destination obtained by ones of the at least one next hop one of the network appliances coupled between the one of the at least one first hop one of the network appliances and the destination; and

computer-readable program code which identifies a connecting node positioned between the at least one first hop one of the network appliances and the ones of the at least one next hop one of the network appliances as the point of loss for data records if the number of data records from the source directed to the destination obtained by one of the at least one first hop one of the network appliances differs by a threshold amount from the number of data records from the source directed to the destination obtained by ones of the at least one next

hop one of the network appliances coupled between the one of the at least one first hop one of the network appliances and the destination.

38. (Original) The computer program product of Claim 37 wherein the at least one first hop one of the network appliances is coupled to the source without intervening ones of the network appliances being coupled between the source and the first hop one of the network appliances and wherein the at least one next hop one of the network appliances is coupled between the at least one first hop one of the network appliances and the destination without intervening ones of the network appliances being coupled between the at least one first hop one of the network appliances and the at least one next hop one of the network appliances..

39. (Original) The computer program product of Claim 37 wherein the computer-readable program code which compares the number of data records from the source directed to the destination obtained by one of the at least one first hop one of the network appliances with the number of data records from the source directed to the destination obtained by ones of the at least one next hop one of the network appliances coupled between the one of the at least one first hop one of the network appliances and the destination further comprises computer-readable program code which compares a number of data records from the source directed to the destination obtained by an upstream one of the network appliances with a number of data records from the source directed to the destination obtained by at least one downstream one of the network appliances coupled between the upstream one of the network appliances and the destination at an adjacent downstream position for successive ones of the network appliances until at least one of the destination is reached or at least one of the connecting nodes is identified as the point of loss for data records and wherein the computer-readable program code which identifies a connecting node positioned between the at least one first hop one of the network appliances and the ones of the at least one next hop one of the network appliances as the point of loss for data records comprises computer-readable program code which identifies a connecting node positioned between the upstream one of the network appliances and corresponding downstream ones of the network appliances as the point of loss for data records if the number of data records from the source directed to the

destination obtained by the upstream one of the network appliances differs by a threshold amount from the number of data records from the source directed to the destination obtained by the corresponding downstream ones of the network appliances.

40. (Original) The computer program product of Claim 39 wherein the computer-readable program code which compares a number of data records from the source directed to the destination obtained by an upstream one of the network appliances with a number of data records from the source directed to the destination obtained by at least one downstream one of the network appliances coupled between the upstream one of the network appliances and the destination at an adjacent downstream position compares successive ones of the network appliances on the topology until the destination is reached and wherein the computer-readable program code which identifies at least one of the connecting nodes as the point of loss further comprises computer-readable program code which identifies all connecting nodes positioned between upstream ones of the network appliances and corresponding downstream ones of the network appliances as points of loss for data records if the number of data records from the source directed to the destination obtained by respective upstream ones of the network appliances differs by a threshold amount from the number of data records from the source directed to the destination obtained by corresponding downstream ones of the network appliances.

41. (Original) The computer program product of Claim 37 further comprising computer-readable program code which adjusts obtained numbers of data records from the source directed to the destination to compensate for in transit introduced changes to data records before comparing the number of data records from the source directed to the destination obtained by one of the at least one first hop one of the network appliances with the number of data records from the source directed to the destination obtained by ones of the at least one next hop one of the network appliances coupled between the one of the at least one first hop one of the network appliances and the destination.

42. (Original) The computer program product of Claim 41 wherein the computer-

readable program code which adjusts obtained numbers of data records comprises computer-readable program code which adjusts obtained numbers of data records from the source directed to the destination to compensate for encryption related changes in data records introduced by a connecting node coupled between the a first hop one and at least one next hop one of the network appliances.

43. (Original) The computer program product of Claim 37 further comprising computer-readable program code which defines the determined period of time for the at least one first hop one of the network appliances and the at least next hop one of the network appliances based on a delay between the at least one first hop one of the network appliances and the at least next hop one of the network appliances.

44. (Original) The computer program product of Claim 43 wherein the computer-readable program code which defines the determined time period further comprises computer-readable program code which defines the determined period of time for the at least one first hop one of the network appliances and the at least next hop one of the network appliances based on an average delay between the at least one first hop one of the network appliances and the at least next hop one of the network appliances determined over an averaging window.

45. (Original) The computer program product of Claim 37 further comprising computer-readable program code which defines the threshold amount based on an expected timing related variability between numbers of data records obtained by ones of the network appliances.

46. (Original) The computer program product of Claim 45 wherein the computer-readable program code which defines the threshold amount further comprises computer-readable program code which defines the threshold amount based on a percentage of data record throughput for respective ones of the network appliances.

47. (Original) The computer program product of Claim 37 wherein the connecting nodes are routing devices selected from the group consisting of routers, bridges and switches.

48. (Original) The computer program product of Claim 37 wherein a network appliance is positioned between each defined connecting node in the topology and all other adjacent defined connecting nodes in the topology.

49. (Original) The computer program product of Claim 48 wherein at least one of the defined connecting nodes comprises a plurality of routing devices.